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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,468	11/12/2003	Sung Jin Yang	AMKOR-095A	6744

7663 7590 07/13/2006

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ALISO VIEJO, CA 92656

EXAMINER

TRINH, HOA B

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,468

Applicant(s)

YANG ET AL.

Examiner

Vikki H. Trinh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/12/15, 21/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Takemura et al. (EP 1032037, applicant cited) (hereinafter Takemura).

As to claim 1, Takemura discloses a semiconductor package, comprising a die paddle 2, 2a (fig. 1) defining multiple corners and opposed first and second surfaces; at least one set of leads 1 or 3 (fig. 1b) extending at least partially about the die paddle in spaced relation thereto, each of the leads having opposed first and second surfaces; at least one tie bar 12, 13, 2b, 9 (fig. 1) attached to and extending from one of the corners of the die paddle 2a, the tie bar having opposed first and second surfaces and at least one aperture (fig. 1 and fig. 1b, area between 2b and 9) disposed therein and extending between the first and second surfaces thereof; a semiconductor die 4 (fig. 1) attached to the first surface of the die paddle 2a and electrically connected to at least one of the leads 3 ; and a package body 6 at least partially covering the die paddle, the leads, the tie bar, and the semiconductor die such that the second surfaces of the leads 3, 1 (fig. 1) are exposed in a common exterior surface of the package body 6, and a portion of the package body 6 extends through the aperture of the tie bar (fig. 1).

As to claims 2, 16, the die paddle 2, 2a (fig. 1b) has a quadrangular configuration defining four corners; and four tie bars 3 are attached to and extend diagonally from respective ones of the four corners of die paddle 2(fig. 1b) .

As to claim 3, each of the tie bars 3 defines an outer end surface; and the at least one aperture (fig. 1b) of each of the tie bars is disposed in close proximity to the outer end surface thereof.

As to claim 4, the package body 6 (fig. 1a) defines four chamfers; and the outer end surface of each of the tie bars extends to a respective one of the chamfers (fig. 1b).

As to claim 5, each of the tie bars 3 includes a plurality of apertures (fig. 1b) disposed therein; portions of the package body extend through each of the apertures of each of the tie bars; and one of the apertures of each of the tie bars is disposed in close proximity to the outer end surface thereof.

As to claim 6, the first and second surfaces of the die paddle 2a (fig. 1b) are each generally planar; the die paddle 2a includes an etched surface which circumvents the second surface thereof; the first and second surfaces of each of the tie bars 3 are each generally planar; the first surface of each of the tie bars extends in substantially co-planar relation to the first surface of the die paddle 2a ; and the second surface of each relation to the etched surface of the die paddle 2a.

As to claim 7, the first and second surfaces of each of the leads 1, 3 (fig. 1b) are each generally planar; the first surface of each of the leads 1, 3 (fig. 1) extends in substantially co-planar relation to the first surface of the die paddle; the second surface of each of the leads 3 extends in substantially co-planar relation to the second surface of the die paddle

2, 2a; and the second surfaces of the leads and the second surface of the die paddle are exposed in and substantially flush with the exterior surface of the package body (fig. 1, 1b).

As to claim 8, the leads 1, 3 (fig. 1) are arranged in an inner set which extends at least partially about the die paddle 2 in spaced relation thereto, and an outer set which extends at least partially about the inner set in spaced relation thereto.

As to claim 9, the leads 1, 3 (fig. 1b) of the inner set and the leads of the outer set are separated from each other by a plurality of isolation trenches formed in the exterior surface of the package body 6.

As to claim 10, the portions of each of the leads 1, 3 (fig. 1b) of the inner and outer sets are exposed in respective ones of the isolation trenches (fig. 1b).

As to claims 11 and 21, the leads 1, 3 (fig. 1b) are arranged in an inner set which extends at least at partially about the die paddle 2 in spaced relation thereto, and an outer set 1 or 3 (fig. 1b) which extends at least partially about the inner set in spaced relation thereto.

Note that lead 1 (fig. 1) is interpreted to have an inner portion 2b separated by a trench or aperture from the outer portion 9 (fig. 1)

As to claims 12 and 22, the leads 1, 3 (fig. 1b) of the inner set and the leads of the outer set are separated from each other by a plurality of isolation trenches formed in the exterior surface of the package body. Note that lead 1 (fig. 1) is interpreted to have an inner portion 2b separated by a trench or aperture from the outer portion 9 (fig. 1)

As to claims 13 and 23, portions of each of the leads 1 or 3 (fig. 1) of the inner and outer sets are exposed in respective ones of the isolation trenches. Note for example that lead 1

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(fig. 1) is interpreted to have an inner portion 2b separated by a trench or aperture from the outer portion 9 (fig. 1)

As to claims 14 and 24, the semiconductor die 4 is electrically connected to the first surfaces of the leads 1 via conductive wires 5 (fig. 1) which are covered by the package body 6.

As to claim 15, the aperture 12 (fig. 1b) of the tie bar 3 has a circular configuration.

As to claim 17, each of the recesses (fig. 1) defines first and second recess walls 13, 14 ; and portions of the outer end surface of each of the tie bars 3 are exposed in each of the first and second recess walls 13, 14 of a respective one of the recesses (fig. 1).

As to claim 18, the first and second recess walls 13, 14 (fig. 1) of each of the recesses extend in generally perpendicular relation to each other (fig. 1b).

As to claim 19, the die paddle 2, 2a (fig. 1 and fig. 1b) includes an etched surface which circumvents the second surface thereof; the first surface of each of the tie bars 3 extends in substantially co-planar relation to the first surface of the die paddle 2a; and the second surface of each of the tie bars 3 extends in substantially co-planar relation to the etched surface of the die paddle 2.

As to claim 20, the first surface of each of the leads 1 or 3 (fig. 1) extends in substantially co-planar relation to the first surface of the die paddle 2; the second surface of each of the leads 1 or 3 extends in substantially co-planar relation to the second surface of the die paddle 2, 2a; and the second surfaces of the leads 1 or 3 and the second surface of the die paddle 2, 2a are exposed in and substantially flush with the exterior surface of the package body (fig. 1).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
4. Cheng et al. (2003/0168719) discloses a leadframe having a die 30, a die paddle 22, inner lead 32 and outer lead 34 .See fig. 2.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached from Monday-Friday, 9:00 AM - 5:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705. The office fax number is 703-872-9306.

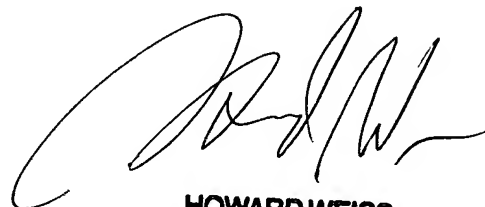
Any request for information regarding to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Also, status information for published applications may be obtained from either Private PAIR or Public Pair. In addition, status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. If you have questions pertaining to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from

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commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

Vikki Trinh,
Patent Examiner
AU 2814

A handwritten signature in black ink, appearing to read 'H. Weiss', is positioned above the printed name and title.

**HOWARD WEISS
PRIMARY EXAMINER**